A Financial Comparison of U.S. and European Pharmaceutical Companies

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Abstract
There are differences in how European and American companies are managed. American companies have one primary goal: to make money. European companies often have multiple objectives. We present a hypothesis that American companies have better short-term profit performance when compared to their European counterparts.

A comparison is performed with financial ratios using publicly available information. While U.S. companies tend to be fairly similar, the European businesses are not so homogeneous. We find that there are differences between the U.S. and European companies, and the hypothesis is supported by the analysis.

Introduction
No matter what their stated objectives, American companies are in business to make money for their shareholders. They may do this in different ways, and have a variety of secondary objectives. Company missions are often guiding principles, and may contain lofty ideals, but secondary objectives tend to support the primary objective of making a profit.

European companies often have multiple objectives. The goal of making money is nearly always one of the stated objectives, but often there are other, sometimes more important goals. One of the primary objectives, sometimes the primary objective, is to provide employment for people. This is one way that the corporation supports the country where it is headquartered. In Germany, unions represent much of the labor force. These unions typically have a voice in the highest levels of the corporation.

Cultural differences have manifested themselves in different ways when it comes to managing the corporation. In the U.S., the Board of Directors ultimately manages the corporation (presumably representing the best interest of the shareholders). These boards are made up of company executives and outside directors. In recent years, there has been a move in the U.S. to increase the number of outside directors, and to decrease the relative influence of corporate executives. While the company management handles the day-to-day decisions, strategy and long term planning tend to be controlled by the Board of Directors.

European companies are in many ways similar, but the control mechanisms can be different. In the U.K., companies are managed much like those in the U.S., with a management board at the top of the corporate hierarchy. In Germany, a two-tiered model is used. The Management board, made up of company executives, manages the day-to-day operation of the company. The Supervisory board oversees and approves the actions of the Management Board. This Supervisory Board is typically made up of 50% labor representation. This ensures that the interests of the workers are protected. (Cunningham, 1998) Aventis, which is a French-German merger, follows the German system. (Aventis, 2002) In Switzerland, there are no rules regarding corporate governance, and many different models are followed. Our two Swiss companies of interest both have Management Boards, but they differ from the U.S. model in that nearly all of the people are corporate executives, with little outside influence. (Novartis, 2002; Roche, 2002)

We have formed a hypothesis that American companies will have better short-term profit performance when compared to their European counterparts. Because of the American focus on the present, coupled with the current single-minded focus on near-term profit, we felt that this should be found in comparing similar companies. Also, we speculate that the near-term investment opportunities (stock ownership) would be better in the American companies. The pharmaceutical business was chosen for this study.

Method
Today's pharmaceutical business is represented by a number of very large multi-national corporations. No one company holds a commanding market share. The top ten worldwide companies, based on their level of pharmaceutical sales (expressed in dollar terms), contain a mixture of American and European companies. The largest Japanese firm is in about 14th place. For our comparison, we chose the top five American companies and the top five European companies based on dollar sales of pharmaceuticals as of the beginning of 2000. (Price Waterhouse Coopers, 2002) Neither American nor European companies dominate the list. The comparison companies are shown in Exhibit 1.

Companies that were not included in the study, but that would make up the next five in size, include Wyeth (formerly known as American Home Products), Eli Lilly, Schering-Plough, Takeda, and Abbott. Takeda is a Japanese company, whereas the remainder are American firms.

Exhibit 1. American and European comparison companies.

U.S.
Bristol-Myers Squibb
Johnson & Johnson
Merck
Pfizer
Pharmacia

Europe
AstraZeneca (United Kingdom)
Aventis (France)
Glaxo SmithKline (United Kingdom)
Novartis (Switzerland)
Roche (Switzerland)

The comparison was based on an analysis of financial ratios during the period of 1998 through 2002. Primary data were obtained from independent financial analysts, primarily the Market Guide / ProVestor report from Multex.com, Inc. and from Standard & Poor's stock reports. (Multex, 2003; Standard & Poor's, 2003) Additional information was obtained from company annual reports and Internet websites during the period. Public financial data were recorded and used to calculate financial ratios.

Two items complicated the analysis. First, all U.S. based companies follow U.S. accounting practices, known as GAAP. All of our EU companies are listed on the New York Stock Exchange, and therefore are required to publish GAAP information in their financial reports. European companies follow their own country's accounting practices; the corporations are controlled and decisions are made based on accounting practices other than GAAP. What may appear as healthy profit in the United Kingdom, for example, may not look the same when expressed in terms according to U.S. GAAP. The difference in accounting procedures proved to be a problem when making comparisons. Because of this issue, financial results were taken primarily from independent research rather than from the companies' annual reports.

The second complication resulted from recent merger activity. There have been numerous mergers and acquisitions in the pharmaceutical industry over the past few years. This distorts the financial information not only because of the merger of financial results, but also due to differences in accounting practices. What is considered capital in one country may be considered expense in another. This can have a profound impact on stated earnings in a given year. Several of our comparison companies were paying one-time unique fees related to recent merger activities. Some of the significant merger and acquisition activities of these companies is listed in Exhibit 2. Notably, only three of our comparison companies were not involved in major merger activities during this time (Merck, Novartis, and Roche).

Exhibit 2. Mergers and Acquisitions

1999	Aventis formed by the merger of Rhone-Poulenc (France) and Hoechst (Germany)
1999	AstraZeneca formed by the merger of Astra (Sweden) and Zeneca (U.K.)
2000	Glaxo Smithkline formed by the merger of Glaxo Welcome (U.K.) and Smithkline Beecham (U.K.)
2000	Pfizer (U.S.) acquired Warner Lambert (U.S.)
2000	Pharmacia & Upjohn (previously Swedish, but relocated to the U.S.) acquired Monsanto (U.S.) and was renamed Pharmacia.
2000	Johnson & Johnson (U.S.) acquired Centocor (U.S.)
2001	Johnson & Johnson acquired ALZA (U.S.)
2001	Bristol-Myers Squibb (U.S.) acquired DuPont Pharmaceuticals (U.S.) and divested Clairol beauty products
2002	Pfizer announces the acquisition of Pharmacia (U.S.); became effective in April 2003.

(Aventis, 2002; AstraZeneca, 2002; Glaxo SmithKline, 2002; Pfizer, 2002; Pharmacia, 2002; Johnson & Johnson, 2002; Bristol-Myers Squibb, 2002)

Pharmacia is an American company, but this is a fairly recent event. Pharmacia began as a Swedish Company, and later moved its headquarters to London. In the late 1990's, the company moved its headquarters from London to New Jersey to be in the center of the worldwide pharmaceutical business. During the data analysis phase, we decided to identify Pharmacia separately because its results in the late 90's tended to be more like a European company than an American one.

Results

Various financial ratios reflect some of the differences that were expected, verifying our hypothesis. Of the companies studied, the U.S companies achieved higher profit margin (15.8%) on average than their European

counterparts (5.4%). The profit margins for our comparison companies during the study period are shown in Exhibit 3. Some of the differences are due to accounting practices in how expenses are accounted. However, we feel that this also demonstrates differences in how the companies view short-term profit. The differences in the ratios also indicate that European companies prefer to use more debt to fund their projects. Hence, the increased interest expense reduces profit.

Exhibit 3, Profit Margin.

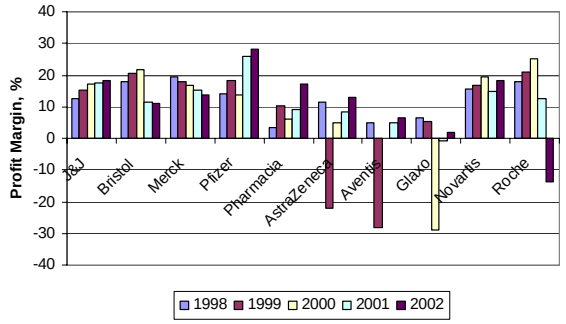
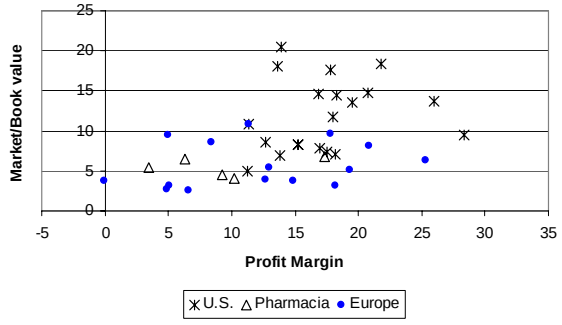


Exhibit 4 shows the relation of market/book value with the profit margin. In this and other scatter plots, each data point represents one company's results for one year; each company will have five data points. It is evident here that the U.S companies show strong market/book value and higher profit margin than the European companies. This demonstrates the high regard that investors place in these American companies.

Exhibit 4. Market / Book value and Profit Margin



European companies appear to be willing to take on more debt than the American companies. An example is the debt-to-equity ratio, where the European companies averaged higher than the American firms. Another difference is how this debt is funded. American companies use a variety of debt instruments, including commercial paper for short term debt and corporate bonds for long-term debt. (Brigham, 2002) European companies tend to have close partnerships with their local banks and typically fund debt by taking out bank loans. This European practice tends to keep tighter control over the debt; there are few stakeholders involved. Americans fund their companies primarily with equity, while many (but not all) European companies fund their companies primarily with loans from their bankers. (Portanger, 2003) The debt-to-equity ratios are shown in Exhibit 5. It can be seen that Bristol-Myers Squibb has been significantly increasing their use of debt in recent years. The company has had financial and management problems, and has not been able to raise funds through the sale of equity. They have instead increased their use of debt instruments. Pharmacia, on the other hand, has been adopting American business practices, and has been reducing their debt load.

Exhibit 5. Debt to equity ratios.

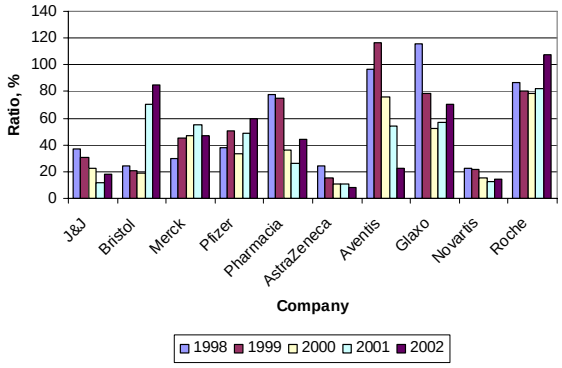
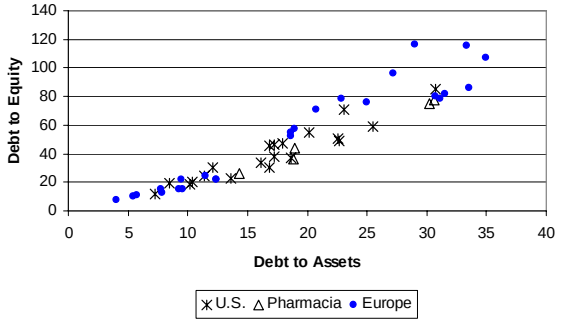


Exhibit 6 shows the relation of the debt-to-asset ratio with the debt-to-equity ratio. We can see here that

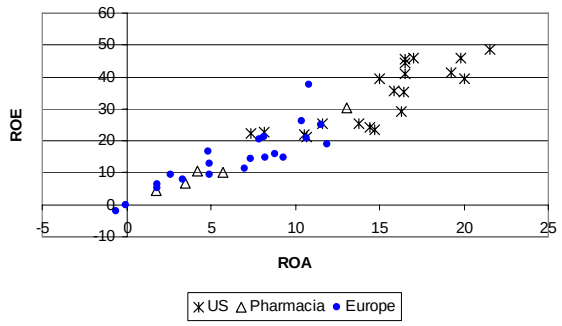
Exhibit 6. Debt/Equity and Debt/Assets



most of the European companies have higher ratios than the American companies.

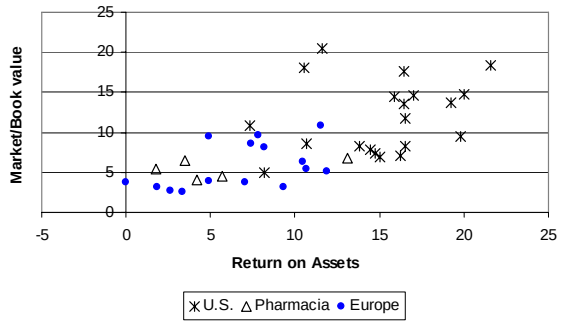
As most American companies have a lower debt ratio, they show a better return on assets and therefore demonstrate a good use of debt. Exhibit 7 shows the relation of Return on Equity with Return on Assets. It is apparent that the U.S. companies have better return on assets and return on equity compared to the European companies. Some of this relates to asset utilization. The European pharmaceutical production model involves a 5-day 2-shift work week, with the 3rd shift devoted primarily as a clean-up shift. The typical European pharmaceutical company will produce product about 80 hours per week or less. Some European companies have work weeks that are significantly shorter than 40 hours. The American equivalent is to produce 24 hours a day, using the production assets 120 or more hours per week. The higher return on assets numbers for the American companies reinforces this operational difference.

Exhibit 7. Return on Assets and Return on Equity



There is also a clear relationship between return-on-assets and market/book value, as expected. Companies that have a higher ROA will be rewarded

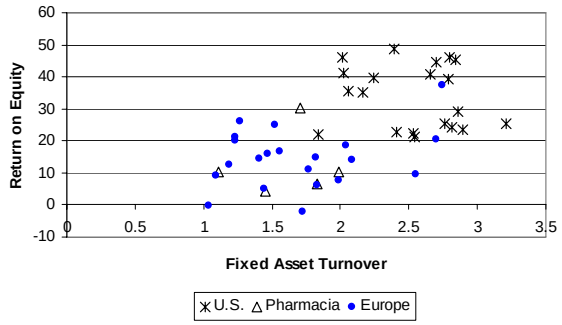
Exhibit 8. Market/Book ratio and Return on Assets



with a high market/book value. The U.S. companies again emerge superior to the European companies as shown in Exhibit 8.

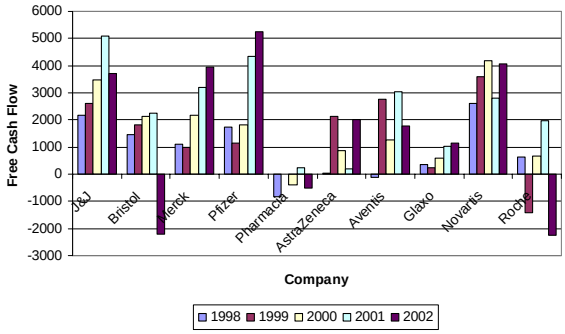
Exhibit 9 illustrates the relationship between fixed asset turnover and return on equity. The U.S. companies have a better fixed asset turnover ratio compared to their European counterparts. The higher return on equity reflects this. The graph reveals that the American companies are obtaining greater productivity from their existing fixed assets, as discussed earlier.

Exhibit 9. Fixed Asset Turnover and Return on Equity



Free cash flow analysis is an ideal benchmark for corporate valuation. The technique eliminates the effect of national accounting practices such as depreciation or accounting of deferred taxes, allowing easy comparison across countries and industries. Exhibit 10 shows the free cash flows (FCF) for all of the companies. Except for Bristol-Myers Squibb, all of the American companies have a high free cash flow ratio.

Exhibit 10. Free Cash Flow



The fact that Bristol-Myers Squibb is making heavier use of debt is making it difficult to maintain its free cash flow. A negative current FCF is not necessarily bad in the short term, provided it is due to high growth. The problem is that sales of Bristol have been declining over the past five years and this can be a very serious problem for the company. On the other hand, most European companies except Novartis have modest free cash available for their operations.

Conclusions

Among the companies in our study, the American companies carry less debt than the average European company. Market/book values tend to be higher among the American companies; this demonstrates the high regard that investors place in these companies.

Most American companies have higher return on assets. In addition, these companies have a higher free cash flow. This is partially due to carrying less debt, and partially due to having greater utilization of their real assets.

There is sufficient evidence to support our hypothesis: the American companies are delivering better short-term performance than their European counterparts. As a result, the U.S. companies are viewed as better short-term investments by the market. A key feature is that the American firms are focused on providing stockholders satisfaction.

References

AstraZeneca PLC, Annual Report, 2002.

Aventis Corporation, Annual Report, 2002.

Brigham, Eugene F., and Michael C. Ehrhardt, *Financial Management: Theory and Practice*, 10th edition, Harcourt, Inc. (2002).

Bristol-Myers Squibb Co., Annual Report, 2002.

Cunningham, Lawrence A., "Global Corporate Governance," http://www.cardozo.yu.edu /heyman /Daimler.html, (cited February 6, 2002).

Glaxo Smithkline PLC, Annual Report, 2002.

Johnson & Johnson, Annual Report, 2002.

Merck & Company, Inc. Annual Report, 2002.

Multex.com Inc., "AstraZeneca PLC, Inc.", http:// www.fidelity.com, cited April 11, 2003.

Multex.com Inc., "Aventis (ADR)", http://www. fidelity.com, cited April 11, 2003.

Multex.com Inc., "Bristol-Myers Squibb Co., Inc.", http://www.fidelity.com, cited May 24, 2003.

Multex.com Inc., "GlaxoSmithKline plc, Inc.", http:// www.fidelity.com, cited April 15, 2003.

Multex.com Inc., "Johnson & Johnson", http://www. fidelity.com, cited April 11, 2003.

Multex.com Inc., "Merck & Co., Inc.", http://www. fidelity.com, cited April 12, 2003.

Multex.com Inc., "Novartis AG (ADR)", http:// www. fidelity.com, cited April 11, 2003.

Multex.com Inc., "Pfizer, Inc.", http://www.fidelity. com, cited May 24, 2003.

Multex.com Inc., "Pharmacia Corporation", http:// www.fidelity.com, cited April 11, 2003.

Multex.com Inc., "Roche Holding AG (ADR)", http:// www.fidelity.com, cited April 11, 2003.

Novartis AG, Annual Report, 2002.

Pfizer Inc., Annual Report, 2002.

Pharmacia Corporation, Annual Report, 2002.

Portanger, Erik, and Marcus Walker, "German Banks Cut Back on Risk, Leaving Openings for Competitors", *Wall Street Journal*, March 28, 2003.

Price Waterhouse Coopers, "PwC Pharmaceuticals", http://www.pwcglobal.com/gx/eng/about/ind/pharm/phlinktop60pharma.html, (cited January 4, 2002).

Roche Holding AG, Annual Report, 2002.

Standard & Poor's, "AstraZeneca PLC," http://www. fidelity.com, (cited May 17, 2003).

Standard & Poor's, "Aventis," http://www.fidelity. com, (cited May 17, 2003).

Standard & Poor's, "Bristol-Myers Squibb Company," http://www.fidelity.com, (cited April 5, 2003).

Standard & Poor's, "GlaxoSmithKline," http://www. fidelity.com, (cited April 12, 2003).

Standard & Poor's, "Johnson & Johnson," http://www. fidelity.com, (cited April 5, 2003).

Standard & Poor's, "Merck & Co., Inc.," http://www. fidelity.com, (cited April 5, 2003).

Standard & Poor's, "Novartis AG," http://www. fidelity.com, (cited May 17, 2003).

Standard & Poor's, "Pfizer Inc.," http://www.fidelity. com, (cited April 5, 2003).

Standard & Poor's, "Pharmacia Corp.," http://www. fidelity.com, (cited April 5, 2003).

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